Status of ROC, HDI, Testboards

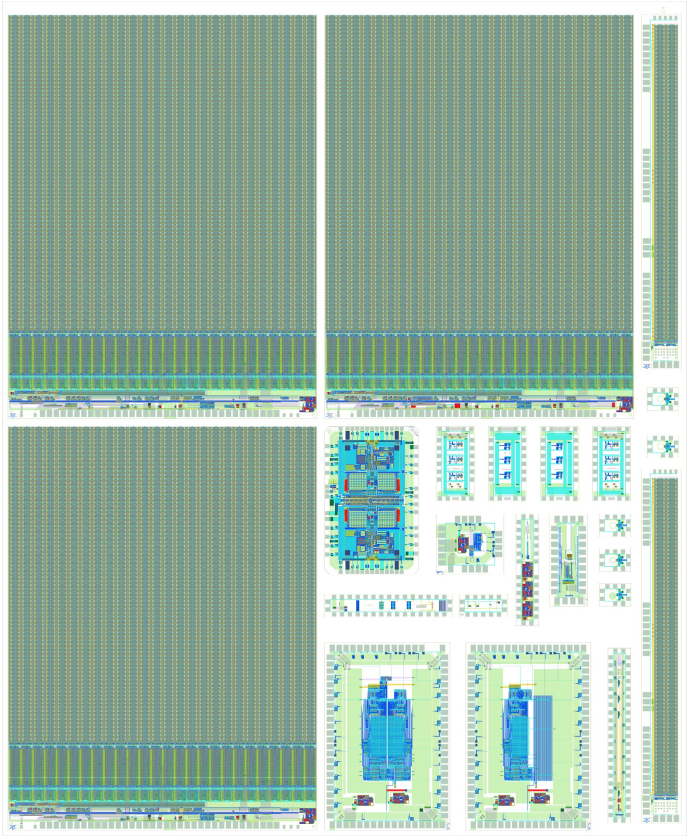
W. Erdmann, PSI

Pixel Phase 1 Management Board

2013-04-09

ROC status

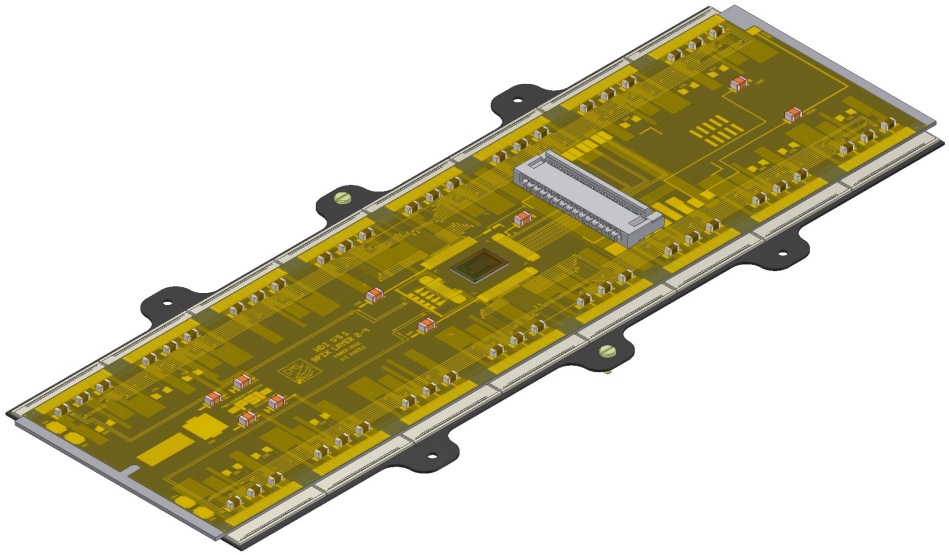
- Submission went out in week 3
- Per reticle
  - (2+1) psi46dig
    → candidate for L2-4 production ROC
  - TBM08, TBM07a, Cable Drivers, DLTs
  - test structures
    – L1 double column
    – Bandgap references, irradiation tests
- Per Wafer
  - 62 reticles, ~150 ROCs / wafer



6 wafers arrived at CERN , → PSI tomorrow
cut 1 wafer asap
prepare 2 others for BB, mask ready end of next week

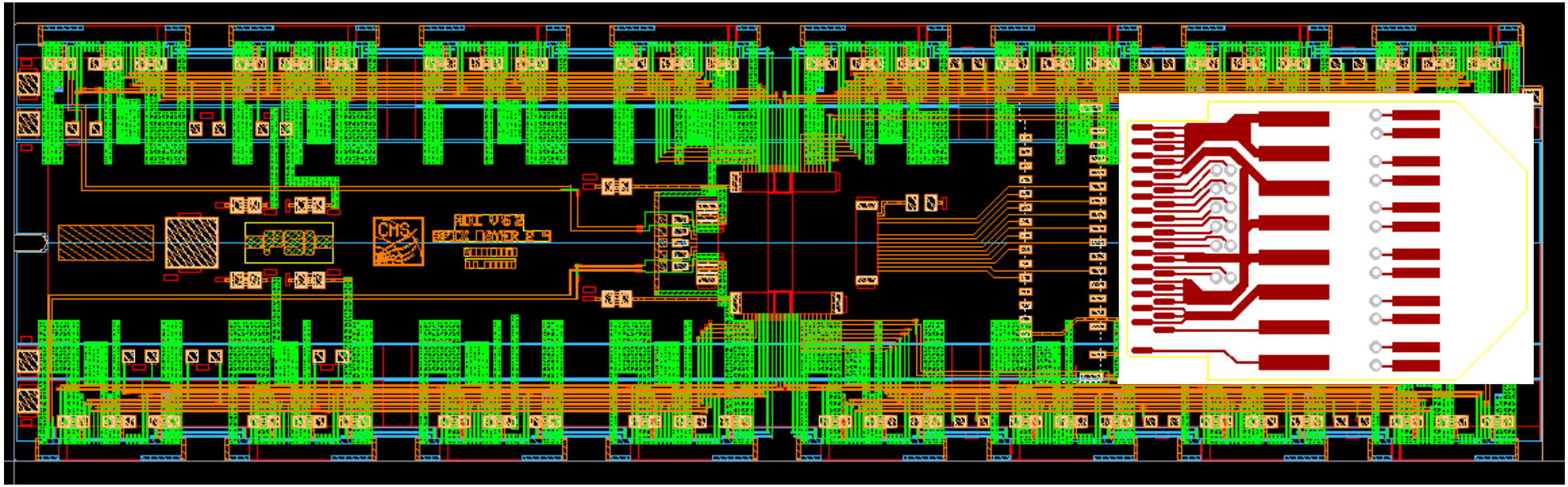
HDI status

- HDI modified for connector
  - L2-4
    - 33 pin Connector footprint
    - Testpoints moved
    - layout done
  - L1 (2 TBMs , 4 output channels)
    - 39 pin connector
    - layout in progress (few more days)
  - el. tests of connectors in preparation
    - HV stability, LV power
  - Benefits of HV sensing reviewed by Morris Swartz
    - Effort/ design risk not justified, HV sensing will not be implemented

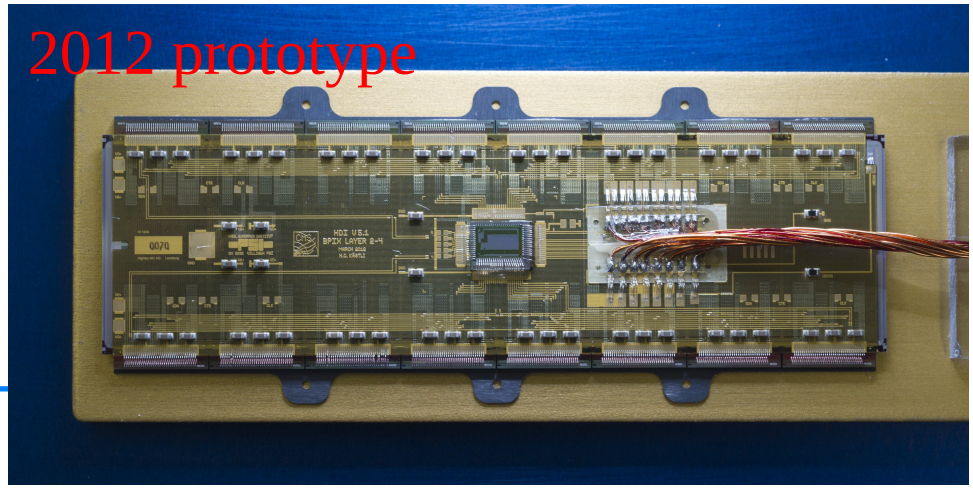


- 18 substrates, each with 14 HDIs
  - 12 L2-4
  - 1 L1
  - 1 analog
- Final order to be placed through CERN ~ week 18

Layout L2-4 HDI



- (almost) final layout
- connector footprint
- shown with mini PCB
  - 2 rows of cable solderpads (not fully inserted)
- some testpoints btwn caps



Testboard status

Prototypes (8)

- All components in hand
- Except ethernet controller – expected today
- submission tomorrow
- Delivery KW 15

(expected end of this week)

Series (140+30)

- All components ordered (→ in hand)
- All expected until end of April
- Submission beg. of June (approval of pre-series)
- Delivery end of June

Testboards

- core firmware available (=functionality of existing testboards)
- further development still ongoing
- Casings / front-panels for pre-series ready
- Preseries testboards → PSI
  - mount driver asics
  - test
  - If ok, few boards available for developers (software / firmware)
- Full series, available ~ end of June
  - Final test and pick-up by designated testboard responsibles